AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.   (Currently Amended) An abnormal pattern candidate detection processing method, comprising the steps of:

i)   detecting an abnormal pattern candidate, which is embedded in a medical image, in accordance with a medical image signal representing a medical image, and

ii)   outputting at least information for specifying the detected abnormal pattern candidate,

wherein the method further comprises the step of calculating a degree of certainty about malignancy, which ~~degree~~ represents a level of possibility of a pattern being a malignant pattern, with respect to the abnormal pattern candidate, the calculation being made in accordance with an index value representing a feature of the abnormal pattern candidate and in accordance with a correlation between the index value and possibility of a pattern being a malignant pattern, which ~~correlation~~ has been obtained from clinical results, and

the step of outputting at least the information for specifying the detected abnormal pattern candidate is a step of outputting information representing the degree of certainty about malignancy with respect to the abnormal pattern candidate together with the information for specifying <u>the position of</u> the detected abnormal pattern candidate, and

wherein the degree of certainty about malignancy is determined from a single index value, which is obtained ~~by combining~~using linear combination of a plurality of indices representing a plurality of feature measures of a calculation object region.

2. (Original) A method as defined in Claim 1 wherein the index value is an index value utilized for the detection of the abnormal pattern candidate.

3. (Original) A method as defined in Claim 1 wherein the information for specifying the detected abnormal pattern candidate and the information representing the degree of certainty about malignancy with respect to the abnormal pattern candidate are a mark, which is displayed at a position for the indication of the abnormal pattern candidate on the medical image, such that the kind of the mark may be altered in accordance with the degree of certainty about malignancy.

4. (Original) A method as defined in Claim 1 wherein the information representing the degree of certainty about malignancy is a numerical value.

5. (Original) A method as defined in Claim 1 wherein the information representing the degree of certainty about malignancy is a warning message, which is altered in accordance with the degree of certainty about malignancy.

6. (Original) A method as defined in Claim 1 wherein the medical image is a mammogram.

7.   (Currently Amended): An abnormal pattern candidate detection processing system, comprising:

i)   abnormal pattern candidate detecting means for detecting an abnormal pattern candidate, which is embedded in a medical image, in accordance with a medical image signal representing a medical image, and

ii)   image output means for outputting at least information for specifying the detected abnormal pattern candidate,

wherein the system further comprises malignancy certainty degree calculating means for calculating a degree of certainty about malignancy, which ~~degree~~ represents a level of possibility of a pattern being a malignant pattern, with respect to the abnormal pattern candidate, the calculation being made in accordance with an index value representing a feature of the abnormal pattern candidate and in accordance with a correlation between the index value and possibility of a pattern being a malignant pattern, which ~~correlation~~ has been obtained from clinical results, and
the image output means outputs information representing the degree of certainty about malignancy with respect to the abnormal pattern candidate together with the information for specifying the position of the detected abnormal pattern candidate, and

wherein the degree of certainty about malignancy is determined from a single index value, which is obtained ~~by combining~~ using linear combination of a plurality of indices representing a plurality of feature measures of a calculation object region.

8.   (Original) A system as defined in Claim 7 wherein the index value is an index value utilized for the detection of the abnormal pattern candidate.

9.   (Original) A system as defined in Claim 7 wherein the information for specifying the detected abnormal pattern candidate and the information representing the degree of certainty about malignancy with respect to the abnormal pattern candidate are a mark, which is displayed at a position for the indication of the abnormal pattern candidate on the medical image, such that the kind of the mark may be altered in accordance with the degree of certainty about malignancy.

10.   (Original) A system as defined in Claim 7 wherein the information representing the degree of certainty about malignancy is a numerical value.

11.   (Original) A system as defined in Claim 7 wherein the information representing the degree of certainty about malignancy is a warning message, which is altered in accordance with the degree of certainty about malignancy.

12.   (Original) A system as defined in Claim 7 wherein the medical image is a mammogram.

13.   (Currently Amended) An abnormal pattern candidate detection processing method, comprising the steps of:

    i)   detecting an abnormal pattern candidate, which is embedded in a medical image, in accordance with a medical image signal representing a medical image, and

    ii)   outputting at least information for specifying the detected abnormal pattern candidate,

wherein the method further comprises the steps of:

    a)   selecting an arbitrary region in the medical image, and

    b)   calculating a degree of certainty about malignancy, which

~~degree~~ represents a level of possibility of a pattern being a malignant pattern, with respect to a pattern embedded in the selected region, the calculation being made in accordance with an index value representing a feature of the pattern embedded in the selected region and in accordance with a correlation between the index value and possibility of a pattern being a malignant pattern, which ~~correlation~~ has been obtained from clinical results, and

the step of outputting at least the information for specifying the detected abnormal pattern candidate is a step of further outputting information representing the degree of certainty about malignancy with respect to the pattern embedded in the selected region.

14.   (Original) A method as defined in Claim 13 wherein the information representing the degree of certainty about malignancy is a numerical value.

15.   (Original) A method as defined in Claim 13 wherein the information representing the degree of certainty about malignancy is a warning message, which is altered in accordance with the degree of certainty about malignancy.

16.   (Original) A method as defined in Claim 13 wherein the medical image is a mammogram.

17.   (Currently Amended) An abnormal pattern candidate detection processing system, comprising:

i)   abnormal pattern candidate detecting means for detecting an abnormal pattern candidate, which is embedded in a medical image, in accordance with a medical image signal representing a medical image, and

ii)   image output means for outputting at least information for specifying the detected abnormal pattern candidate,

wherein the system further comprises:

a)   region selecting means for selecting an arbitrary region in the medical image, and

b)   malignancy certainty degree calculating means for calculating a degree of certainty about malignancy, which ~~degree~~ represents a level of possibility of a pattern being a malignant pattern, with respect to a pattern embedded in the selected region, the calculation being made in accordance with an index value representing a feature of the pattern embedded in the selected region and in accordance with a correlation between the index value and possibility of a pattern being a malignant pattern, which ~~correlation~~ has been obtained from clinical results, and

the image output means further outputs information representing the degree of certainty about malignancy with respect to the pattern embedded in the selected region.

18.   (Original) A system as defined in Claim 17 wherein the information representing the degree of certainty about malignancy is a numerical value.

19.　　(Original) A system as defined in Claim 17 wherein the information representing the degree of certainty about malignancy is a warning message, which is altered in accordance with the degree of certainty about malignancy.

20.　　(Original) A system as defined in Claim 17 wherein the medical image is a mammogram.

21.　　(Currently Amended) An abnormal pattern candidate detection processing method, comprising the steps of:

　　　　i)　　detecting an abnormal pattern candidate, which is embedded in a medical image, in accordance with a medical image signal representing a medical image, and

　　　　ii)　　outputting at least information for specifying the detected abnormal pattern candidate,

　　　　wherein the method further comprises the steps of:

　　　　a)　　calculating a degree of certainty about malignancy, which degree-represents a level of possibility of a pattern being a malignant pattern, with respect to a predetermined region in the medical image, which predetermined region-has been set for each of pixels in the medical image, as the degree of certainty about malignancy corresponding to each of the pixels in the medical image, the calculation being made in accordance with an index value representing a feature of a pattern embedded in the predetermined region and in accordance with a correlation between the index value and possibility of a pattern being a malignant pattern, which correlation-has been obtained from clinical results, and

b)   forming a distribution image signal representing a distribution image, which represents a distribution of the degrees of certainty about malignancy in the medical image, in accordance with the thus calculated degrees of certainty about malignancy, each of which ~~degrees~~ corresponds to one of the pixels, and

the step of outputting at least the information for specifying the detected abnormal pattern candidate is a step of further outputting the distribution image in accordance with the thus formed distribution image signal.

22.   (Original) A method as defined in Claim 21 wherein the medical image is a mammogram.

23.   (Currently Amended) An abnormal pattern candidate detection processing system, comprising:

i)   abnormal pattern candidate detecting means for detecting an abnormal pattern candidate, which is embedded in a medical image, in accordance with a medical image signal representing a medical image, and

ii)   image output means for outputting at least information for specifying the detected abnormal pattern candidate,

wherein the system further comprises:

a)   malignancy certainty degree calculating means for calculating a degree of certainty about malignancy, which ~~degree~~ represents a level of possibility of a pattern being a malignant pattern, with respect to a predetermined region in the medical image, which ~~predetermined region~~ has been set for each of pixels in the medical image, as the degree of certainty about malignancy corresponding to each of the pixels in the medical image, the calculation being made in accordance with an index value representing a feature

of a pattern embedded in the predetermined region and in accordance with a correlation

between the index value and possibility of a pattern being a malignant pattern, which

~~correlation~~ has been obtained from clinical results, and

    b) distribution image signal forming means for forming a

distribution image signal representing a distribution image, which represents a distribution

of the degrees of certainty about malignancy in the medical image, in accordance with the

thus calculated degrees of certainty about malignancy, each of which ~~degrees~~ corresponds to

one of the pixels, and

    the image output means further outputs the distribution image in accordance

with the distribution image signal, which has been formed by the distribution image signal

forming means.

   24. (Original) A system as defined in Claim 23 wherein the medical image is a

mammogram.

   25-30. (Cancelled).